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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,627	03/23/2004	Anish N. Puri	069532-0284	2614

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EXAMINER

UHLENHAKE, JASON S

ART UNIT	PAPER NUMBER
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2853

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/806,627

Applicant(s)

PURI, ANISH N.

Examiner

Jason Uhlenhake

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-10 is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haflinger (U.S. Pat. 6,672,697) in view of Ikemoto et al (U.S. Pub. 2004/0095420)

Haflinger discloses:

- ***regarding claim 1 and claim 4***, identifying one of the plurality of staggered print heads as a reference print head; identifying a plurality of time offsets corresponding to the plurality of staggered print heads, the plurality of time offsets representing printing times of the plurality of staggered print heads relative to the printing time of the reference print head ; determining whether to print data based on the time offset corresponding to the print head; (Figure 10; Column 7, Lines 65 – 67; Column 8, Lines 1 – 21)
- ***further regarding claim 4***, iteration means for activating the determination means, a first provision means, and a second provision means for each of the plurality of printing times (Figure 10; Column 6, Lines 55 – 65; Column 7, Lines 65 – 67; Column 8, Lines 1 – 21)

Haflinger does not disclose expressly the following:

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- **regarding claims 1, 4**, providing the subset of print data to the print head if it is determined that the print head should print the subset of the print data; otherwise providing a predetermined data set to the print head

- **regarding claim 2, and claim 5**, a step of providing null data to the print head

Ikemoto discloses:

- **regarding claims 1, 4**, providing the subset of print data to the print head if it is determined that the print head should print the subset of the print data; otherwise providing a predetermined data set to the print head (Figure 13; Paragraphs 0101, 0110-0111), for the purpose of preventing quality deterioration of the print result caused by irregular characteristics.

- **regarding claim 2, and claim 5**, a step of providing null data/dummy data to the print head (Figure 13; Paragraphs 0101, 0110-0111), for the purpose of preventing quality deterioration of the print result caused by irregular characteristics.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Ikemoto into the device of Haflinger, for the purpose of preventing quality deterioration of the print result caused by irregular characteristics.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haflinger (U.S. Pat. 6,672,697).

Haflinger discloses:

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- **regarding claim 4**, identifying one of the plurality of staggered print heads as a reference print head; identifying a plurality of time offsets corresponding to the plurality of staggered print heads, the plurality of time offsets representing printing times of the plurality of staggered print heads relative to the printing time of the reference print head (Figure 10; Column 7, Lines 65 – 67; Column 8, Lines 1 – 21)

- for each of the plurality of staggered print heads, determining whether to print a subset of the print data based on the time offset corresponding to the print head; providing the subset of print data to the print head if it is determined that the print head should print ht subset of the print data; otherwise providing a predetermined data set to the print head (Column 6, Lines 55 – 65)

Haflinger does not disclose expressly the following:

- **regarding claim 4**, iteration means for activating the determination means, a first provision means, and a second provision means for each of the plurality of printing times

Haflinger discloses identifying a plurality of timing offsets/iteration means for the firing of droplets and providing a subset of data/pixels to corresponding print heads. Therefore, it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Haflinger. The motivation for doing so would have been to improve the quality of printing.

Claims 3, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haflinger (U.S. Pat. 6,672,697) in view of McDonald (U.S. Pub. 2002/0057306)

Haflinger discloses all the claimed limitations above except for the following:

- ***regarding claim 3, and claim 6***, step of providing preheat data to the print head

McDonald discloses:

- ***regarding claim 3, and claim 6***, step of providing preheat data to the print head (Paragraph 0016), for the purpose of getting the print head temperature ready for ink ejection.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of a step of providing preheat data to the print head as taught by McDonald into the device of Haflinger. The motivation for doing so would have been to get the print head temperature ready for ink ejection.

Response to Arguments

Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection. Please see the above rejection regarding Haflinger (U.S. Pat. 6,672,697) in view of Ikemoto et al (U.S. Pub. 2004/0095420).

Regarding claims 2 and 5, Ikemoto discloses providing null data/dummy data to the print head, there is nothing in the claim that says image data cannot be provided to the same print head at the same time as the null data/dummy data.

Allowable Subject Matter

The following is a statement of reasons for the indication of allowable subject matter:

Claims 7 – 10 are allowed.

The primary reason for the allowance of claims 7 - 8 is the inclusion of the method step of in a first time interval, providing a first portion of the print data to the first print head; providing null data to the second print head; in a second time interval which occurs later than the first time interval by an amount of time equal to the time offset, providing a second portion of the print data to the first print head; and providing the first portion of the print data to the second print head. It is this step found in each of the claims, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claims 9 - 10 is the inclusion of the limitation of means for providing, in a first time interval, a first portion of the print data to the first print head; means for providing, in the first time interval, null data to the second print head; means for providing, in a second time interval which occurs later than the first time interval by an amount of time equal to the time offset, a second portion of the print data to the first print head; and means for providing, in the second time interval the first portion of the print data to the second print head. It is this limitation found in each of the claims, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

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Conclusion

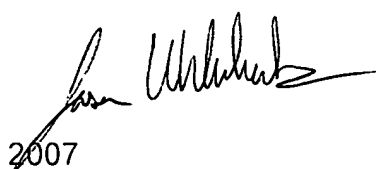
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Uhlenhake whose telephone number is (571) 272-5916. The examiner can normally be reached on Monday - Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JSU

January 30, 2007



STEPHEN MEIER
SUPERVISORY PATENT EXAMINER